99TH CONGRESS
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HOUSE OF REPRESENTATIVES
REPORT
99-776

# FOREST ECOSYSTEMS AND ATMOSPHERIC POLLUTION RESEARCH ACT OF 1986

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AUGUST 8, 1986.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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Mr. DE LA GARZA, from the Committee on Agriculture, submitted the following

## REPORT

[To accompany H.R. 2631]

The Committee on Agriculture, to whom was referred the bill (H.R. 2631) to provide for study and research on the decline in United States forest productivity and to determine the effects of atmospheric pollutants on forest environments, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The amendment is as follows:

Strike all after the enacting clause and insert the following:

**SECTION 1. SHORT TITLE.**

This Act may be cited as the "Forest Ecosystems and Atmospheric Pollution Research Act of 1986".

**SEC. 2. Findings.**

Congress finds that—

(1) the health and productivity of forests in certain regions of the United states are declining;

(2) existing research indicates that atmospheric pollution, including ozone, acidic deposition, and heavy metals, may contribute to this decline;

(3) there is an urgent need to expand and better coordinate existing Federal, State, and private research, including research by private industry, to determine the cause of changes in the health and productivity of domestic forest ecosystems and to monitor and evaluate the effects of atmospheric pollutants on such ecosystems; and

(4) such research and monitoring should not impede efforts to control atmospheric pollutants.

**SEC. 3. ESTABLISHMENT OF RESEARCH PROGRAM.**

Section 3 of the Forest and Rangeland Renewable Resources Research Act of 1978 (16 U.S.C. 1642) is amended by adding at the end the following:

"(c)(1) The Secretary, acting through the United States Forest Service, shall establish not later than 180 days after the date of the enactment of this subsection a 10-year program (hereinafter in this subsection referred to as the 'Program') to—

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"(A) increase the frequency of forest inventories in matters that relate to atmospheric pollution and conduct such surveys as are necessary to monitor long-term trends in the health and productivity of domestic forest ecosystems;

"(B) determine the scope of the decline in the health and productivity of domestic forest ecosystems;

"(C) accelerate and expand existing research efforts (including basic forest ecosystem research) to evaluate the effects of atmospheric pollutants on forest ecosystems and their role in the decline in domestic forest health and productivity;

"(D) study the relationship between atmospheric pollution and other climatological, chemical, physical, and biologial factors that may affect the health and productivity of domestic forest ecosystem;

"(E) develop recommendations for solving or mitigating problems related to the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems;

"(F) foster cooperation among Federal, State, and private researchers and encourage the exchange of scientific information on the effects of atmospheric pollutants on forest ecosystems among the United States, Canada, European nations, and other nations; and

"(G) support the long-term funding of research programs and related efforts to determine the causes of decline in the health and productivity of domestic forest ecosystems and the effects of atmospheric pollutants on the health and productivity of domestic forest ecosystems.

"(2) The Secretary shall establish a committee to advise the Secretary in developing the Program, which shall be composed of scientists with training and experience in various disciplines, including atmospheric, ecological, and biological sciences. Such scientists shall be selected from among individuals who are actively performing research for Federal or State agencies or for private industries, institutions, or organizations.

"(3) The Secretary shall coordinate the Program with existing research efforts of Federal and State agencies and private industries, institutions, or organizations.

"(4) The Secretary shall submit to the President and to Congress the following reports:

"(A) Not less than 30 days before establishing the Program, the Secretary shall submit an initial program report—

"(i) discussing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;

"(ii) outlining the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems;

"(iii) describing the Program; and

"(iv) estimating the cost of implementing the Program for each fiscal year its duration.

"(B) Not later than January 15 of each year during which Program is in operation following the year in which the initial program report is submitted, the Secretary shall submit an annual report—

"(i) updating information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;

"(ii) updating the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems, including efforts conducted under the Program;

"(iii) recommending additional research and monitoring efforts to be undertaken under the Program to determine the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems; and

"(iv) recommending methods for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest escosystems.

"(C) Not later than 10 years after the date on which the initial program report is submitted, the Secretary shall submit a final report—

"(i) reviewing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;

"(ii) reviewing the nature and findings of all research and monitoring efforts conducted under the Program and any other relevant research and

monitoring efforts related to the effects of atmospheric pollution on forest ecosystem; and

"(iii) making final recommendations for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.".

## Brief Explanation

H.R. 2631, as amended, would direct the Secretary of Agriculture, through the Forest Service, to establish a 10-year program to determine the effects that atmospheric pollution may have on forest ecosystems located in the United States.

Under the program, the Secretary would increase forest inventories and surveys to determine the scope of the problem of declining forests in the United States; conduct accelerated and expanded research to evaluate the effects of air pollutants on mitigating problems related to the effects of air pollutants on forest health and productivity.

The program also would foster greater public and private sector cooperation in research and monitoring; encourage the international exchange of scientific information on air pollution and forests; and provide a basis for estimating long-term funding needs to support research programs related to the effects of air pollution on United States forest ecosystems.

The program would be developed with the advice of a committee established by the Secretary, and composed of scientists with training and experience in appropriate scientific disciplines.

The Secretary must submit to the President and Congress reports as follows:

(1) an *initial* report to outline the program;

(2) *annual* reports, updating research and related activities under the program;

(3) a *final* report on program activities with recommendations to solve or mitigate air pollution effects on forest ecosystems.

## Purpose and Need

I

H.R. 2631, as amended, would amend the Forest and Rangeland Renewable Resources Research Act of 1978 to direct the Secretary of Agriculture to establish, through the Forest Service, a 10-year program to determine the effects of air pollutants, in addition to acid precipitation, on forest ecosystems. The bill would give clear direction to the Forest Service to develop and implement this program and expand the agency's current research and survey efforts in this area beyond their limited focus on acid precipitation.

II

Concern for declining health and productivity of forests in the United States and Europe has intensified in recent years. Although some of these declines have been associated with drought, insect infestations, or disease, there is increasing evidence that air pollution may also be a contributing factor.

Recent dramatic declines in the health and vigor of West German forests (which the Germans have termed "Waldsterben" or "forest death") have been widely publicized. When the Federal Republic of Germany conducted its first national vegetation survey in 1982, it was estimated that 7.7 percent of the forest area was affected by Waldsterben. By 1985, survey results indicated that more than 50 percent of German forests were exhibiting dieback or decline symptoms. Other European nations have also reported damage to their forests. Until recently, this damage had been primarily attributed to the effects of acid precipitation.

Visible declines in the health of high elevation spruce forests along the Applalachian Mountains first raised public concern in the United States about possible air pollution damage to domestic forests. Studies of spruce forests on Camel's Hump in Vermont and on Mount Mitchell in North Carolina were offered as evidence that air pollutants, particularly acid precipitation, were affecting domestic forests.

A November 1985 U.S. Forest Service report documented declines in the growth of commercially important Southern pine in the Piedmont and Mountain regions of the Southeast. Declines of 30 to 50 percent in the radial growth of certain trees were reported during the past two decades. Although air pollution could not be confirmed as the cause, the Forest Service noted that radial growth reductions had occurred in trees in Europe many years before visible symptoms of air pollution damage were apparent.

III

In response to concern over the effects of acid precipitation on the environment, Congress enacted the Acid Precipitation Act of 1980, w' ch established the framework for a comprehensive research program to (1) identify the causes and effects of acid precipitation and (2) identify actions to limit or ameliorate the harmful effects of acid precipitation. Under this authority, the National Acid Precipitation Assessment Program (NAPAP) was established to conduct research on the sources, transport, deposition, and effects of acid precipitation. The U.S. Forest Service was identified as the lead agency for assessing the terrestrial effects of acid precipitation.

One component of NAPAP is the Forest Response Program that is jointly sponsored by the Forest Service, Environmental Protection Agency, and the National Council on Air and Stream Improvement. Its purpose is to determine (1) if there is a significant problem of forest damage in North America that might be caused by acid rain, its precursors, or associated pollutants; (2) the casual relationship between acid rain and forest damage; and (3) what the dose-response relationship between acid rain and forest damage may be.

A significant problem with the current Forest Response Program is its narrow focus on acid rain. Research in Europe, the United States, and Canada has indicated that other pollutants such as ozone and heavy metals, in addition to acid precipitation, may be causing declines in forest health and productivity. For example, Forest Service studies of white pine in the Southeast and of pon-

derosa pine forests in southern California have documented declines in the health of these forests due to ozone. Scientists testifying before the Subcommittee on Forests, Family Farms, and Energy during its May 13, 1986, oversight hearing made clear that other air pollutants, in addition to acid precipitation, warrant study with regard to their effects on forests.

IV

H.R. 2631 responds to the need to broaden the scope of current research and monitoring related to the effects of air pollution on forests. It will do so by directing the Secretary of Agriculture to establish, through the Forest Service, a 10-year program to determine the effects of air pollution, in addition to acid precipitation, on forest ecosystems.

This program is to consist of increased forest inventories and surveys to determine the scope of declining U.S. forest health and accelerated and expanded research to evaluate the effects of pollutants on forest ecosystems.

Research under the program will seek to determine the effects of all air pollutants suspected of having a significant effect on forest ecosystem health, not simply acid precipitation and its precursors. The research is to be developed in an integrated manner to consider the relationship between climatological, chemical, physical, and biological factors that may affect forest health and should include basic research on the structure and functions of forest ecosystems.

Current efforts to monitor air quality in forest ecosystems are limited and focus almost exclusively on acid deposition. These efforts must be expanded under the program to include other pollutants, in addition to acid precipitation and its precursors, suspected of affecting forest health. In particular, a system to monitor ozone levels in forest environments is needed and would be authorized under the bill.

The Forest Service also should move quickly under the program to establish a means to monitor trends in the health of forest ecosystems. The agency has proposed establishment of a national vegetation survey for this purpose. Such a survey should be developed and implemented without further delay.

The 10-year program established by H.R. 2631 is intended to foster greater public and private sector cooperation in research and monitoring related to the effects of air pollutants on forests and encourages greater international exchange of related scientific information. The program is to be coordinated with similar existing public and private research and monitoring efforts.

Under the bill, the Secretary is to establish a committee of scientists with training and experience in various disciplines including atmospheric, ecological, and biological sciences and who are actively performing research, to provide advice in developing the program.

The bill will require the Forest Service to submit a number of reports to the President and Congress. These reports are: (1) to provide Congress with a clear understanding of the program's long-term objectives and funding needs; (2) to provide Congress with an annual update on progress in implementing research and monitor-

ing associated with the program and any findings that result; and (3) to advise Congress of final recommendations for solving or mitigating the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems that result from the findings of research and inventories conducted under this authority.

H.R. 2631 provides for the long-term funding of research programs and related efforts authorized by the bill by requiring the Forest Service to identify program funding needs, on an annual basis for the duration of the program, in preparing and submitting the initial report required under the bill. It also will require the Forest Service to develop policy and management recommendations to solve or mitigate problems related to the effects of air pollution on forest health and productivity based on the findings of research and monitoring and other available information.

## Section-by-Section Analysis

*Section 1—Short Title*

Section 1 provides that the bill may be cited as the "Forest Ecosystems and Atmospheric Pollution Research Act of 1986".

*Section 2—Findings*

Section 2 would make Congressional findings that (1) the health and productivity of forests in certain regions of the United States are declining; (2) existing research indicates that atmospheric pollution, including ozone, acidic deposition, and heavy metals, may contribute to this decline; (3) there is an urgent need to expand and better coordinate existing Federal, State, and private research, including research by private industry, to determine the cause of changes in the health and productivity of domestic forest ecosystems and to monitor and evaluate the effects of atmospheric pollutants on such ecosystems; and (4) such research and monitoring should not impede efforts to control atmospheric pollutants.

*Section 3—Establishment of Research Program*

Section 3 would amend section 3 of the Forest and Rangeland Renewable Resources Research Act of 1978 by adding at the end of the section a new subsection (c).

Section 3 of the Act currently provides a broad authorization for the Secretary of Agriculture to conduct, support, and cooperate in investigations, experiments, tests, and other activities the Secretary deems necessary to obtain, analyze, develop, demonstrate, and disseminate scientific information about protecting, managing, and using forest and rangeland renewable resources in rural, suburban, and urban areas.

New subsection (c), in paragraph (1), would require the Secretary of Agriculture, acting through the Forest Service, to establish, not later than 180 days after the date of enactment of the bill, a 10-year program to—

> (1) increase the frequency of forest inventories in matters that relate to atmospheric pollution and conduct surveys as necessary to monitor long-term trends in the health and productivity of domestic forest ecosystems;

(2) determine the scope of the decline in the health and productivity of domestic forest ecosystems;

(3) accelerate and expand existing research efforts (including basic forest ecosystem research) to evaluate the effects of atmospheric pollutants on forest ecosystems and their role in the decline in domestic forest health and productivity;

(4) study the relationship between atmospheric pollution and other climatological, chemical, physical, and biological factors that may affect the health and productivity of domestic forest ecosystems;

(5) develop recommendations for solving or mitigating problems related to the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems;

(6) foster cooperation among Federal, State, and private researchers and encourage the exchange of scientific information on the effects of atmospheric pollutants on forest ecosystems among the United States, Canada, European nations, and other nations; and

(7) support the long-term funding of research programs and related efforts to determine the causes of declines in the health and productivity of domestic forest ecosystems and the effects of atmospheric pollutants on the health and productivity of domestic forest ecosystems.

New subsectin (c), in paragraph (2), would require the Secretary of Agriculture to establish a committee to advise him in developing the program described in paragraph (1). The Committee would be composed of scientists with training and experience in various disciplines including atmospheric, ecological, and biological sciences. The scientists must be selected from among individuals who are actively performing research for Federal or State agencies or private industries, institutions, or organizations.

New subsection (c), in paragraph (3), would require that the Secretary of Agriculture coordinate the program described in paragraph (1) with existing research efforts of Federal and State agencies and private industries, institutions, or organizations.

New subsection (c), in paragraph (4), would require the Secretary of Agriculture to submit to the President and Congress the following reports:

(1) Not less than 30 days before establishing the program described in paragraph (1), the Secretary must submit an initial program report discussing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe; outlining the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems; describing the program; and estimating the cost of implementing the program for each fiscal year of its duration.

(2) Not later than January 15 of each year during which the program is in operation (following the year the initial program report is submitted), the Secretary must submit annual reports updating information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe; updating the findings and status of all

current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems, including efforts conducted under the program; recommending additional research and monitoring efforts to be undertaken under the program tc determine the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems; and recommending methods for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.

(3) Not later than 10 years after the date the initial program report is submitted, the Secretary must submit a final report reviewing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe; reviewing the nature and findings of all research and monitoring efforts conducted under the program and any other relevant research and monitoring efforts related to the effects of atmospheric pollution on forest ecosystems; and making final recommendations for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.

## COMMITTEE CONSIDERATION

### HEARINGS

The Subcommittee on Forests, Family Farms, and Energy held an oversight hearing on May 13, 1986, to consider the effects of acid deposition and other air pollutants on forests. Witnesses included scientists and others involved in public and private research on the effects of air pollution on forests in the United States and abroad. They described the health of forests in Europe, Canada, and the United States, as well as current public and private research to determine the relationship between air pollution and forest health and productivity.

Those appearing before the Subcommittee made clear that concern for the effects of air pollution on forests is growing in Europe and the United States. Visible symptoms of damage to forests attributed to air pollution is extensive in a number of European nations. Although visible forest damage attributed to air pollution has been limited to high elevation spruce forests in the eastern United States, a recent report of declining productivity of commercially important pine forests in the Southeast has indicated that air pollution damage cannot be ruled out as a cause.

Witnesses emphasized that acid rain (or acid precipitation) is just one component affecting forest health and productivity. Other pollutants of concern included ozone ($O_3$) and other photochemical oxidants; sulphur dioxide ($SO_2$); excess nitrogen deposition; heavy metals such as lead, cadmium, copper, and zinc; and growth-altering organic substances such as aniline and ethylene. Dr. Chris Bernabo, former Director of the National Acid Precipitation Assessment Program (NAPAP), stated with regard to the emphasis on acid rain of current Federal research coordinated through NAPAP

that, "I would reconsider the mandate being as narrowly focused as it is [on acid rain]".

To address concern for the effects of air pollutants on forest ecosystems, witnesses recommended that a coordinated program of research, air pollution monitoring, and forest inventories and surveys was needed. Substantial support was offered for improvements in air pollution monitoring and forest inventory efforts associated with the existing Forest Response Program. One witness representing NAPAP acknowledged that very little monitoring of air pollutants for their potential effects on forests, beyond wet deposition, was currently occurring under NAPAP. Dr. Leonard Weinstein of Cornell University emphasized, "There has to be increased monitoring [of ozone]." Others indicated that the long-term health and productivity of forest ecosystems should be monitored to assess the possible effects of air pollution on domestic forests.

Panelists appearing before the Subcommittee emphasized that research on the effects of air pollutants on forests should be ecosystem-oriented. As one witness recommended, "It is very important that we look at whole tree and whole system responses." Also made clear was the need to make a long-term, sustained investment in this program of research and monitoring.

Witnesses representing the electric power utilities and forest products industries explained their programs of research and monitoring related to the effects of air pollution on forests. They urged continued cooperation and coordination between public and private research efforts related to air pollution and forests. An improvement in international cooperation and coordination in research and monitoring was also recommended.

## SUBCOMMITTEE MARKUP

The Subcommittee on Forests, Family Farms, and Energy met, pursuant to notice, on June 12, 1986, in business session to consider H.R. 2631. Subcommittee chairman Charles O. Whitley called the meeting to order and recognized Mr. Weaver.

Mr. Weaver offered an amendment in the nature of a substitute for the bill. Mr. Weaver explained that the substitute was the result of efforts by himself, Chairman Whitley, and ranking minority member Morrison to improve the bill following the public hearing held by the Subcommittee.

Mr. Smith asked for a clarification of certain language in the substitute relating to increasing the frequency of forest inventories. Mr. Smith said that there has been some difficulty in updating the forest inventories in Forest Service region 6. Mr. Smith suggested that all forest inventories throughout the country might be updated under the terms of the substitute. Mr. Whitley suggested that the language in the substitute be amended to clarify that forest inventories be increased in matters that relate to atmospheric pollution.

Mr. Smith agreed that Mr. Whitley's suggested language would address his concerns. Without objection, the subcommittee agreed to the Whitley amendment.

The Weaver substitute, as amended, was adopted by voice vote. In the presence of a quorum, the Subcommittee agreed to report

the bill, as amended, to the Committee with the recommendation that the bill pass.

### COMMITTEE MARKUP

The Committee met, pursuant to notice, in business session on July 23, 1986, for consideration of various matters including H.R. 2331. Chairman de la Garza called the meeting to order and recognized Mr. Whitley to explain the bill. Mr. Whitley described the bill, noting that it would establish a 10-year research program to determine the cause for the possible declining forest health and productivity in the United States. Mr. Whitley said the bill would not require new budget authority. Mr. Brown said he is an enthusiastic supporter of the bill, stating that more than 10 years of research in southern California have pinpointed ozone as being a major factor in the decline of pine forests in the mountains surrounding the Lost Angeles basin. Mr. Brown commented that the Forest Service should be the lead agency in protecting the health of the forest resource of the United States and not be forced to rely on incidental research conducted by other Federal agencies.

Mr. Morrison commended Mr. Whitley for his work, and expressed his support for the bill.

Mr. Bedell said the Committee may need to conduct oversight activities to make sure the Department fully implements the program required by the bill.

In the presence of a quorum, the Committee agreed to report H.R. 2631, as amended by the Subcommittee, with the recommendation that the bill pass. Without objection, the staff was authorized to make technical corrections in the bill.

### ADMINISTRATION POSITION

At the time this report was filed, the views of the administration on H.R. 2631, as amended, had not been presented to the Committee. Comments received by the Committee regarding H.R. 2631, as introduced, are set forth in the following letter to Chairman de la Garza:

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
*Washington, DC, September 24, 1985.*

Hon. E (KIKA) DE LA GARZA,
*Chairman, Committee on Agriculture,*
*House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: As you requested, here are our views on H.R. 2631, a bill "To provide for study and research on the decline in United States forest productivity and to determine the effects of atmospheric pollutants on forest environments, and for other purposes."

The Department recommends that H.R. 2631 not be enacted.

The bill would require the Secretary of Agriculture to conduct research to determine the causes of declining forest productivity and the effects of air pollution on forest growth, regeneration, and ecosystems. The Secretary of Agriculture would be required to submit three reports to Congress: an initial report within 1 year,

an interim report within 3 years, and a final report within 10 years from the date of enactment. The Secretary would be required to seek the cooperation and assistance of Federal agencies, public and private universities, industry, testing laboratories, local and State governments, and other interested groups and individuals. Twenty-five million dollars would be authorized to be appropriated to the Secretary of Agriculture for each of the 10 fiscal years beginning with fiscal year 1986.

New legislation is not necessary for this research to be conducted. The Forest and Rangeland Renewable Resources Research Act of 1978 provides adequate authority for this research. This authority is specifically cited in H.R. 2631 (Sec. 3.(b)).

This Administration supports increasing research on acid precipitation so that scientific uncertainties are narrowed and pressing policy questions can be addressed more adequately. The Department of Agriculture, Forest Service, is currently conducting research and plans to increase research efforts that would be required by H.R. 2631. The FY 1985 budget for the National Acid Precipitation Assessment Program (NAPAP) was $65 million, of which over $16 million was allocated to forest effects research. The President's FY 1986 budget request for this program is $85 million, of which approximately $25 million will be appropriated to various Federal agencies for forest effects research. Forest effects research is one of the priority initiatives proposed by NAPAP for FY 1986.

The authorization level in H.R. 2631 exceeds the program level anticipated for all Forest Service atmospheric deposition research in FY 1986 and that projected for subsequent years. It is, however, approximately equal to the President's FY 1986 budget request for research on terrestrial effects for all Federal agencies participating in the National Acid Precipitation Assessment Program.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

JOHN R. BLOCK, *Secretary.*

BUDGET ACT COMPLIANCE (SECTION 308 AND SECTION 403)

The provisions of clause 2(l)(3)(B) of Rule XI of the Rules of the House of Representatives and section 308(a) of the Congressional Budget Act of 1974 (relating to estimates of new budget authority or new or increased tax expenditures) are not considered applicable. The estimate and comparison required to be prepared by the Director of the Congressional Budget Office under clause 2(l)(3)(C) of Rule XI of the Rules of the House of Representatives and section 403 of the Congressional Budget Act of 1974 were not received by the Committee prior to the filing of this report. The Committee was advised that it is anticipated that such an estimate and comparison will be available prior to consideration of the bill on the Floor of the House.

The Committee estimates that the bill would require new authorizations of appropriations of up to $11 million annually. This authorization would be required for appropriations to institute the provisions of this bill in addition to continuing current programs.

Any spending under the bill would be subject to annual appropriations action. If fully appropriated, the bill would add $11 million to the budget after the initial startup period.

### Inflationary Impact Statement

Pursuant to clause 2(l)(4) of rule XI of the Rules of the House of Representatives, the Committee estimates that enactment of H.R. 2631, as amended, will have no inflationary impact on the national economy.

### Oversight statement

No summary of oversight findings and recommendations made by the Committee on Government Operations under clause 2(b)(2) of Rule X of the Rules of the Hosue of Representatives was available to the Committee with reference to the subject matter specifically addressed by H.R. 2631, as amended.

No specific oversight activities other than the hearings detailed in this report were conducted by the Committee within the definition of clause 2(b)(1) of Rule X of the Rules of the House of Representatives.

### Changes in Existing Law

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, and existing law in which no change is proposed is shown in roman):

### Forest and Rangeland Renewable Resources Research Act of 1978

Sec. 1. This Act may be cited as the "Forest and Rangeland Renewable Resources Research Act of 1978".

#### PURPOSE

Sec. 2. (a) Congress finds that scientific discoveries and technological advances must be made and applied to support the protection, management, and utilization of the Nation's renewable resources. It is the purpose of this Act to authorize the Secretary of Agriculture (hereinafter in this Act referred to as the "Secretary") to implement a comprehensive program of forest and rangeland renewable resources research and dissemination of the findings of such research.

(b) This Act shall be deemed to complement the policies and direction set forth in the Forest and Rangeland Renewable Resources Planning Act of 1974.

#### RESEARCH AUTHORIZATION

Sec. 3. (a) The Secretary is authorized to conduct, support, and cooperate in investigations, experiments, tests, and other activities the Secretary deems necessary to obtain, analyze, develop, demonstrate, and disseminate scientific information about protecting,

managing, and utilizing forest and rangeland renewable resources in rural, suburban, and urban areas. The activities conducted, supported, or cooperated in by the Secretary under this Act shall include, but not be limited to, the five major areas of renewable resource research identified in paragraphs (1) through (5) of this subsection.

(1) Renewable resource management research shall include, as appropriate, research activities related to managing, reproducing, planting, and growing vegetation on forests and rangeland for timber, forage, water, fish and wildlife, esthetics, recreation, wilderness, energy production, activities related to energy conservation, and other purposes; determining the role of forest and rangeland management in the productive use of forests and rangelands, indiversified agriculture, and in mining, transportation, and other industries; and developing alternatives for the management of forests and rangelands that will make possible the most effective use of their multiple products and services.

(2) Renewable resource environmental research shall include, as appropriate, research activities related to understanding and managing surface and subsurface water flow, preventing and controlling erosion, and restoring damaged or disturbed soils on forest and rangeland watersheds; maintaining and improving wildlife and fish habitats; managing vegetation to reduce air and water pollution, provide amenities, and for other purposes; and understanding, predicting, and modifying weather, climatic, and other environmental conditions that affect the protection and management of forests and rangelands.

(3) Renewable resource protection research shall include, as appropriate, research activities related to protecting vegetation and other forest and rangeland resources, including threatened and endangered flora and fauna, as well as wood and wood products in storage or use, from fires, insects, diseases, noxious plants, animals, air pollutants and other agents through biological, chemical and mechanical control methods and systems; and protecting people, natural resources, and property from fires in rural areas.

(4) Renewable resource utilization research shall include, as appropriate, research activities related to harvesting, transporting, procesing, marketing, distributing, and utilizing wood and other materials derived from forest and rangeland renewable resources; recycling and fully utilizing wood fiber; producing and conserving energy; and testing forest products, including necessary fieldwork associated therewith.

(5) Renewable resource assessment research shall include, as appropriate, research activities related to developing and applying scientific knowledge and technology in support of the survey and analysis of forest and rangeland renewable resources described in subsection (b) of this section.

(b) To ensure the availability of adequate data and scientific information for development of the periodic Renewable Resource Assessment provided for in section 3 of the Forest and Rangeland Renewable Resources Planning Act of 1974, the Secretary of Agriculture shall make and keep current a comprehensive survey and analysis of the present and prospective conditions of and requirements for renewable resources of the forests and rangelands of the

United States and of the supplies of such renewable resources, including a determination of the present and potential producitivity of the land, and of such other facts as may be necessary and useful in the determination of ways and means needed to balance the demand for and supply of these renewable resources, benefits, and uses in meeting the needs of the people of the United States. The Secretary shall conduct the survey and analysis under such plans as the Secretary may determine to be fair and equitable, and cooperate with appropriate officials of each State and, either through them or directly, with private or other entities.

*(c)(1) The Secretary, acting through the United States Forest Service, shall establish not later than 180 days after the date of the enactment of this subsection a 10-year program (hereinafter in this subsection referred to as the 'Program') to—*

*(A) increase the frequency of forest inventories in matters that relate to atmospheric pollution and conduct such surveys as are necessary to monitor long-term trends in the health and productivity of domestic forest ecosystems;*

*(B) determine the scope of the decline in the health and productivity of domestic forest ecosystems;*

*(C) accelerate and expand existing research efforts (including basic forest ecosystem research) to evaluate the effects of atmospheric pollutants on forest ecosystems and their role in the decline in domestic forest health and productivity;*

*(D) study the relationship between atmospheric pollution and other climatological, chemical, physical, and biological factors that may affect the health and productivity of domestic forest ecosystems*

*(E) develop recommendations for solving or mitigating problems related to the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems;*

*(F) foster cooperation among Federal, State, and private researchers and encourage the exchange of scientific information on the effects of atmospheric pollutants on forest ecosystems among the United States, Canada, European nations, and others nations; and*

*(G) support the long-term funding of research programs and related efforts to determine the causes of declines in the health and productivity of domestic forest ecosystems and the effects of atmospheric pollutants on the health and productivity of domestic forest ecosystems.*

*(2) The Secretary shall establish a committee, which shall be to advise the Secretary in developing the Program, composed of scientists with training and experience in various disciplines including atmospheric, ecological, and biological sciences. Such scientists shall be selected from among individuals who are actively performing research for Federal or State agencies or for private industries, institutions, or organizations.*

*(3) The Secretary shall coordinate the Program with existing research efforts of Federal and State agencies and private industries, institutions, or organizations.*

*(4) The Secretary shall submit to the President and to Congress the following reports:*

*(A) Not less than 30 days before establishing the Program, the Secretary shall submit an initial program report—*

*(i) discussing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;*

*(ii) outlining the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the healt', and productivity of forest ecosystems;*

*(iii) describing the Program; and*

*(iv) estimating the cost of implementing the Program for each fiscal year of its duration.*

*(B) Not later than January 15 of each year during which the Program is in operation following the year in which the initial program report is submitted, the Secretary shall submit an annual report—*

*(i) updating information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;*

*(ii) updating the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems, including efforts conducted under the Program;*

*(iii) recommending additional research and monitoring efforts to be undertaken under the Program to determine the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems; and*

*(iv) recommending methods for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.*

*(C) Not later than 10 years after the date on which the initial program report is submitted, the Secretary shall submit a final report—*

*(i) reviewing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;*

*(ii) reviewing the nature and findings of all research and monitoring efforts conducted under the Program and any other relevant research and monitoring efforts related to the effects of atmospheric pollution on forest ecosystems; and*

*(iii) making final recommendations for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.*

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